

## CLAIMS:

1. Method of carburizing at subatmospheric pressures, a treatment gas containing hydrocarbons being supplied to a treatment chamber and an exhaust stream exiting from the treatment chamber, characterized in that the opacity of the gaseous atmosphere prevailing in the treatment chamber (3) and/or the opacity of the exhaust stream (4) exiting from the treatment chamber (3) is determined and, as a function of the determined opacity, the feeding of the hydrocarbon-containing treatment gas (1) into the treatment chamber (3) is regulated.

2. Method according to Claim 1, characterized in that, when an opacity value, which is set or can be set, is exceeded, the feeding of the hydrocarbon-containing treatment gas (1) into the treatment chamber (3) is interrupted.

3. Method according to Claim 1, characterized in that, when an opacity value, which is set or can be set, is exceeded, the quantity of the hydrocarbon-containing treatment gas (1) fed to the treatment chamber (3) is reduced (1).

4. Method according to one of the preceding Claims 1 to 3, characterized in that a pressure between 3 and 20 mbar is set in the treatment chamber (3).

5. Method according to one of the preceding claims, characterized in that alkanes, alkenes, alkynes or derivatives of the afore-mentioned, to which hydrogen can be admixed, are used as hydrocarbon-containing treatment gas (1).

6. Device for carburizing at subatmospheric pressures, having at least one treatment chamber, at least one feeding line, by way of which a treatment gas containing hydrocarbons is fed to the treatment chamber, and at least one evacuating line by way of which the exhaust stream is withdrawn from the treatment chamber by means of an evacuating device, characterized in that at least one valve (2) is arranged in the feeding line (1), at least one device (10) for determining the opacity of the gaseous atmosphere prevailing in the treatment chamber (3) is arranged in the treatment chamber (3), and/or at least one opacity probe (5) is arranged in the evacuating line (4), and an analyzing unit (9) is provided which, as a function of the opacity of the exhaust stream (4) determined by means of the device for determining the opacity of the gaseous atmosphere prevailing in the treatment chamber (3), and/or by means of the

opacity probe (5), regulates the feeding of the hydrocarbon-containing treatment gas (1) into the treatment chamber (3) by means of driving the valve (2).

7. Device according to Claim 6, characterized in that the valve (2) is a control valve.

8. Device according to Claim 6 or 7, characterized in that the analyzing unit (9) permits the setting of an opacity limit value.